

HOW I DO IT

Laparoscopic Maneuvers in the Presence of Ascites

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In the management of abdominal tumors, the laparoscopic surgeon is frequently called upon to assess a patient with moderate to significant ascites without a clear causation for the abdominal fluid. This can be an extremely challenging procedure for both the patient and physician. My approach to these patients is to preoperatively perform paracentesis prior to the laparoscopic procedure in order effectively to perform peritoneal biopsies and full assessment of the intra-abdominal cavity. It is not necessary to tap the abdomen completely dry since laparoscopic techniques may be safely performed with a moderate amount of ascites present. I recommend performing diagnostic laparoscopy under general anesthesia techniques, although the use of local techniques and IV sedation is supported by some. An "open" approach, or a Veress needle puncture may be done before the appli-

cation of appropriate pneumoperitoneum. I favor an "open" approach using a Hasson trocar (Fig. 1) since the underlying bowel and potentially adherent tumor may be more easily assessed if a small (2-3 cm) subumbilical incision is made to introduce the camera. If a Veress needle approach is used (Fig. 2), the patient should be placed in the reverse Trendelenburg position to allow ascitic fluid to accumulate in the pelvis and the bowel to float in a cephalad position on the surface of the ascitic fluid. This technique is in direct opposition to the usual

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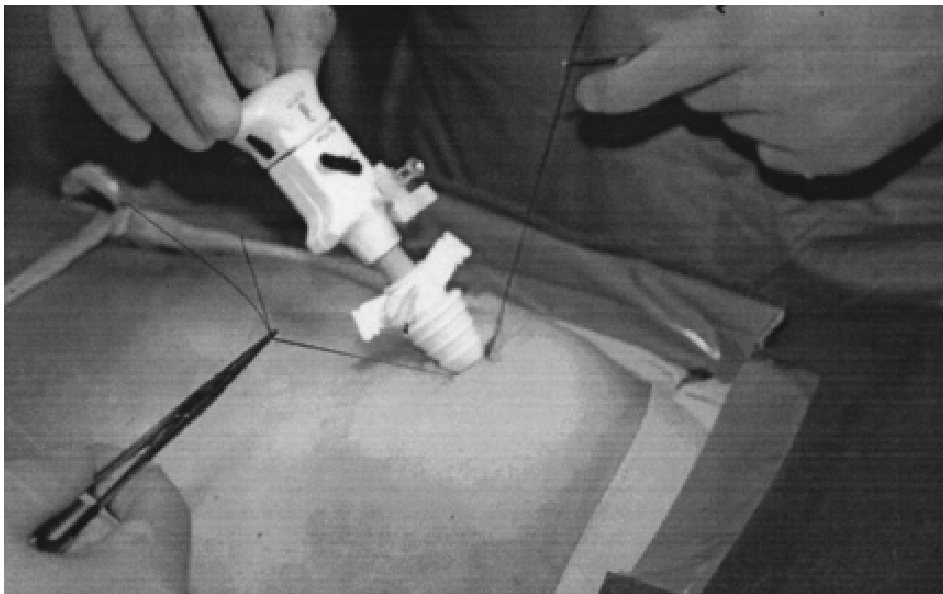


Fig. 1. Hasson trocar in place in umbilical position.

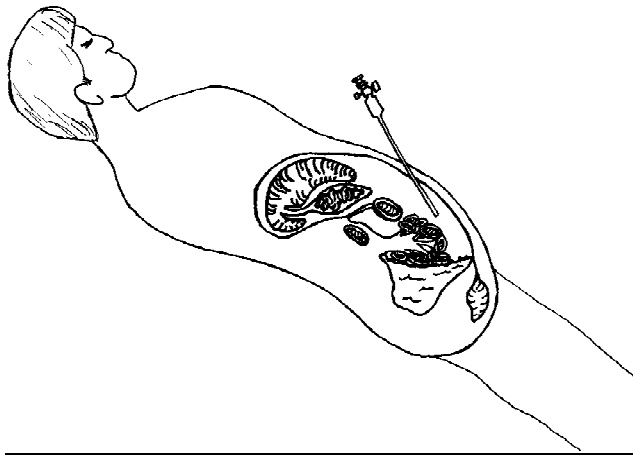


Fig. 2. Proper positioning of patient in reverse Trendelenburg to allow intestinal contents to float on surface of ascitic fluid. Veress needle is placed parallel to abdominal wall for proper insufflation of CO_2 to avoid creation of gas bubbles.

approach in patients without ascitic fluid, who are placed in a Trendelenburg position for initial puncture. Once the needle has been safely placed, aspiration of ascitic fluid will indicate appropriate placement. At this time, the needle should be positioned above the ascitic fluid, if possible, in order to avoid significant bubbling of carbon dioxide through the abdominal fluid. A Veress needle also may be used to remove additional ascitic fluid from the pelvis before CO_2 is instilled.

The abdominal cavity is generally distended using 10–12 mm of mercury pressure, which will allow for a complete examination of the parietal peritoneum as well as

the surface of solid organs. It is important to be able to identify the nature of the ascites by color and consistency since chylous ascites is generally milky in color and ascitic fluid from peritoneal mesothelioma has a thick white syrupy consistency. Most ascitic fluid from abdominal malignancies will be either serous or serosanguinous. Careful inspection of peritoneal surfaces will generally reveal small implants associated with malignant ascites. Excisional biopsy using cupped forceps through accessory trocars is appropriate. It is important to have electrocautery support available since biopsies at the surface of the liver will generally lead to minimal bleeding, which should be controlled with the electrocautery. The color of the peritoneal implants also may give indication of the cause of the ascites. Generally, metastases from pancreatic primaries are whitish in color and quite firm. Metastatic implants from melanoma are generally pigmented and usually purple in color.

One of the important principles following the laparoscopic assessment is to repair all fascial defects carefully in patients who have malignant ascites in order to reduce the possibility of leakage. Generally, the subumbilical midline incision for the laparoscopic camera is closed with interrupted absorbable suture. Multiple layered closures are indicated for accessory trocar sites in order to reduce ascitic leak. If these principles are adhered to, patients may be safely examined who have malignant ascites and therefore the axiom of William Osler may be fulfilled: *Diseases that harm call for therapies that harm less.*